

SCIENCE AND INVENTION.

Work of the World's Busy Brains in Discovering, Inventing and Creating.

THE PRODUCER GAS ENGINE.

The remarkable development in producer gas engines in Europe continues unabated, and all the leading engineers predict the near arrival of the time when the present steam engine will be as archaic as the old treadmill, and competition will be between the turbine engine and the gas producer engine. There is one great disadvantage connected with the gas producer engine, and that is that when it is once started it must be kept running until it is definitely stopped. Therefore, for engines of less than 200-horsepower a reversing gear is provided, so that in place of stopping the engine it is made to run backward. In the larger engines compressed air is employed, so that they can be stopped and started again without great difficulty. The smaller powers are able to run without water-cooling of the cylinders, and this obtains to as large engines as those having pistons of 20-inch diameter and two-foot stroke, making easily 100-horsepower. Beyond this it is necessary to have water-cooled pistons and rods, but this difficulty is being overcome by ingenious appliances. There are now very many engines of from 250 to 400-horsepower running regularly in London, from Monday morning to Saturday afternoon, without a stop. There are instances of engines running 51 days without stopping, though that class of engines require more cleaning and adjustment than steam engines. Engines of 500, even 1,000, horsepower are now building in England for marine use, and a 7,000-ton cargo steamer is under construction. It is calculated that the use of gas engines will not only enable her to be run on about half the coal cost of steam, but it will also give her 13,000 additional cubic feet of cargo space.

It is estimated that this season the investments in Summer and amusement parks will reach \$100,000,000. There are about 2,000 parks in the country, three-fourths of which are controlled and operated for electric lines.

The Atchison, Topeka & Santa Fe Railroad is now operating in Somerville, Tex., what will be the largest plant in the world for preserving lumber. Several methods are employed, but the most work is done with creosote, which is sent to Galveston in shiploads. The price is very expensive, but it pays. For example, piling in its natural state costs about 40 cents a foot, and the treated pile costs between 90 cents and \$1. The average life of an untreated pile is less than one year, and some of them rot off or are destroyed by the teredo in 30 days. Creosote piling has stood in the Galveston bridge for 15 years, and is still strong and sound.

WORK OF THE PATENT OFFICE.
For the week ended May 8, the Patent Office issued 677 patents, 22 designs, 290 trade-marks, 30 labels, 32 signs, three re-issues, making a total of 1,044, of which 633 patents and 329 trade-marks went to citizens of the United States and 66 patents and 13 trade-marks to those of foreign countries.

Sheet-Metal Keg.
Alfred T. Kruse, Defiance, O., has obtained a patent for a sheet-metal keg having outer and inner sheets with the

Metallic Feed Box.
Harry M. Thayer, Woodhull, Ill., has received a patent for a metallic feed box, the body portion of which is pressed from a single blank of metal

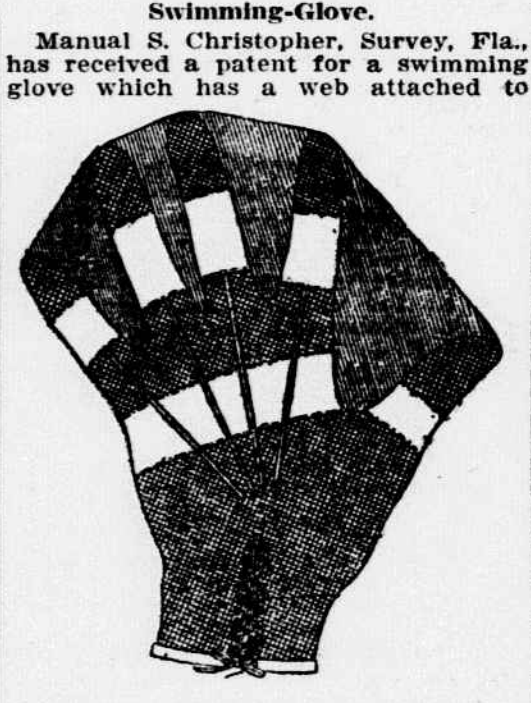
Initiation Apparatus.
The inventor is invading even the sacred precincts of the lodge and anteroom and the presence of the sacred goat. John M. Seibert, Pekin, Ill., has received a patent for a device to be used in effectively impressing the mind of

Plow Beam.
Robert T. Huggins, Venters, S. C., has received a patent for a new form of plow beam of metal which is approximately semi-circular and has reinforcements to give it the greatest strength.

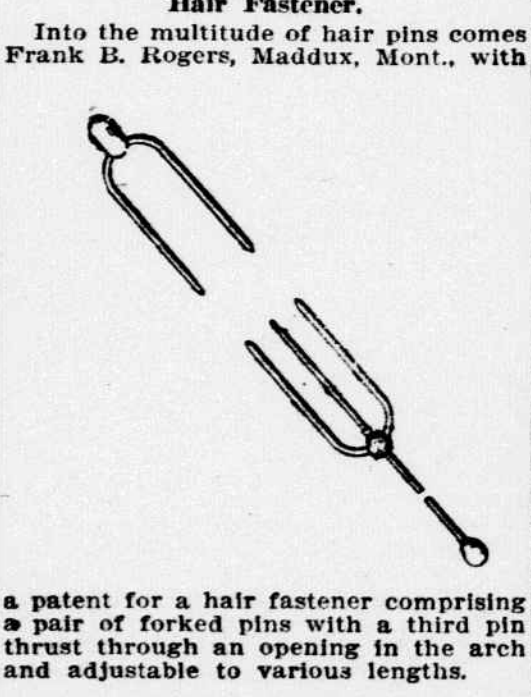
Bedclothes Holder.
John T. Cowles, Chicago, Ill., comes to the relief of children and those of larger growth whose vivacious feet make it difficult to keep the clothes tucked around them, with a device by which the bedclothes can be held in proper position no matter how restless the sleeper.



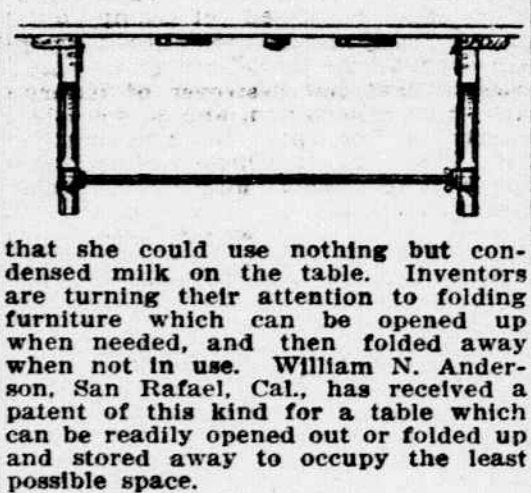
Swimming-Glove.
Manual S. Christopher, Survey, Fla., has received a patent for a swimming glove which has a web attached to



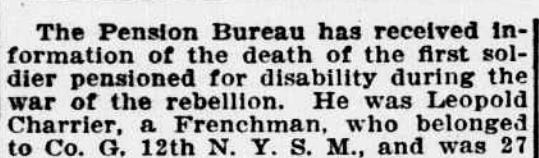
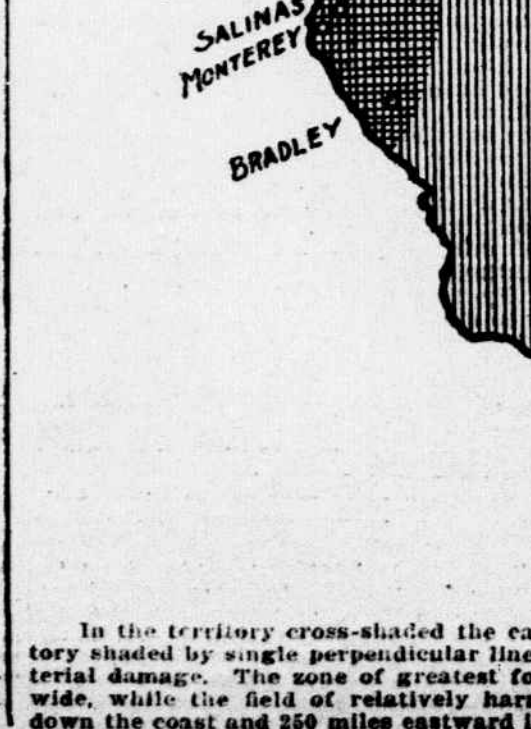
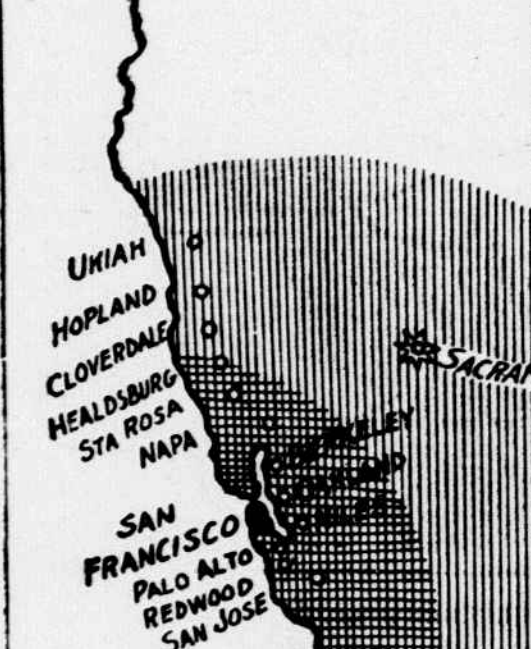
Hair Fastener.
Into the multitude of hair pins comes Frank B. Rogers, Maddux, Mont., with



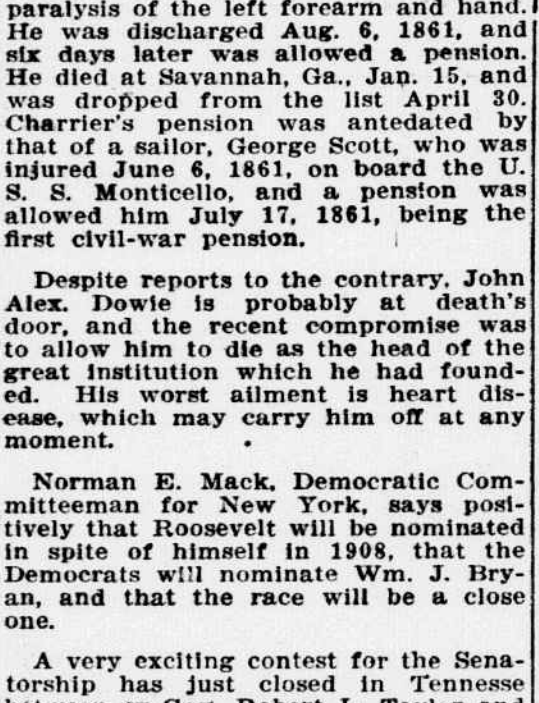
Folding Furniture.
Life in flats means intense economy of space—recalling the woman whose husband had to learn to wag his tail up and down because there was not room enough in the flat for him to move it sideways, and it was also mentioned



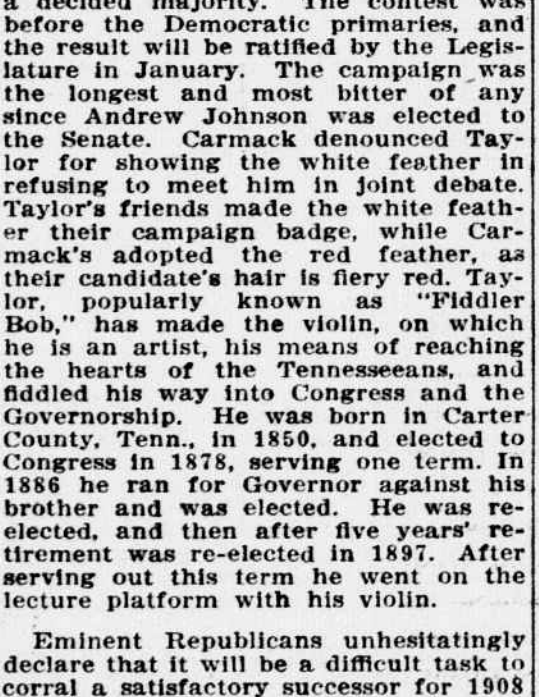
ends bent to form a rim or flange over which the heads are fitted.



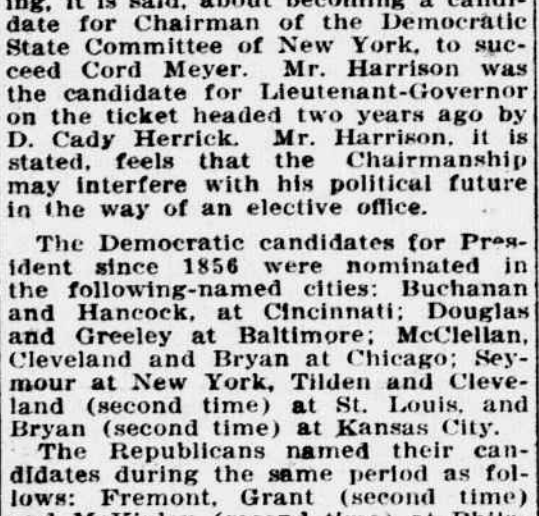
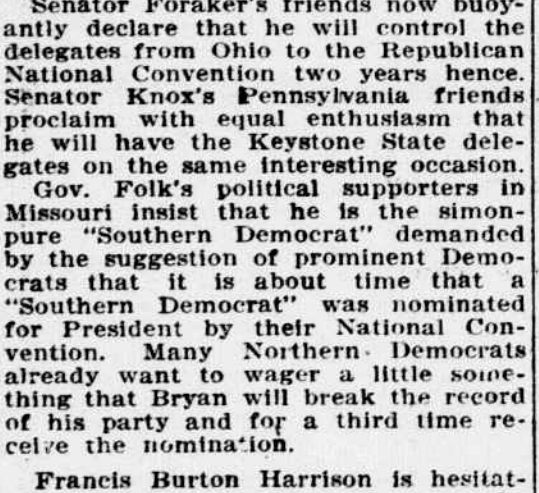
the thumb and fingers and capable of being distended so as to give the greatest purchase on the water.



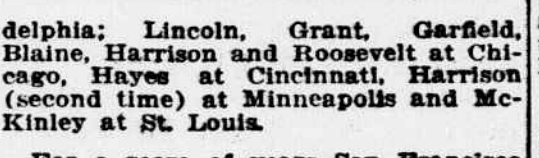
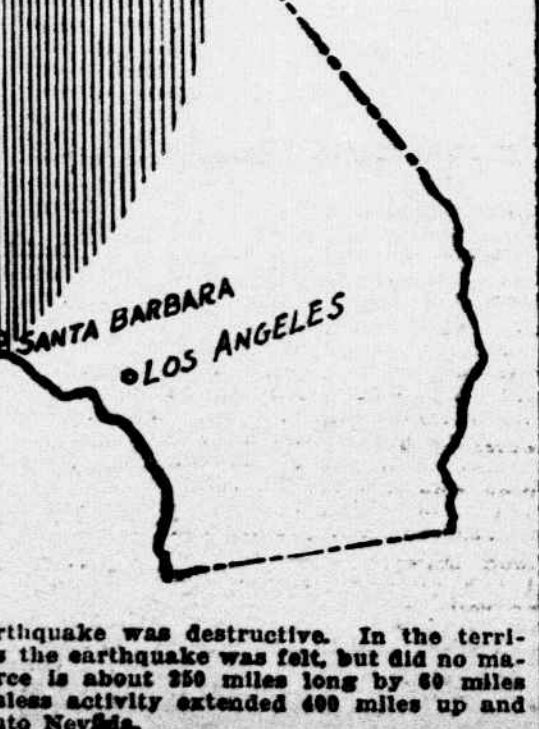
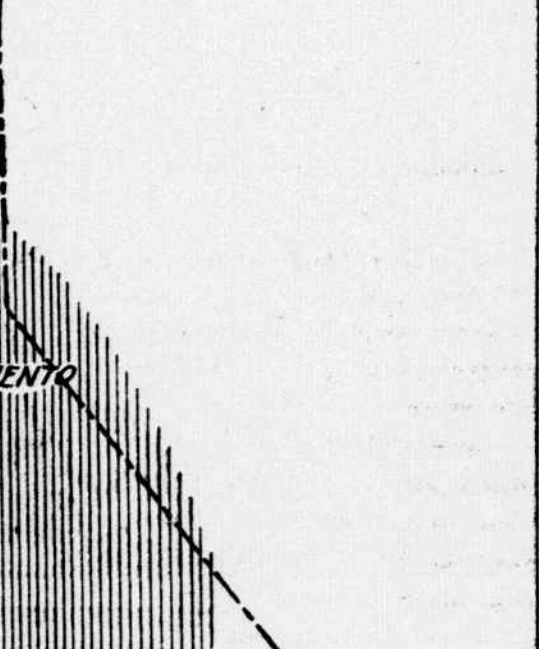
a patent for a hair fastener comprising a pair of forked pins with a third pin thrust through an opening in the arch and adjustable to various lengths.



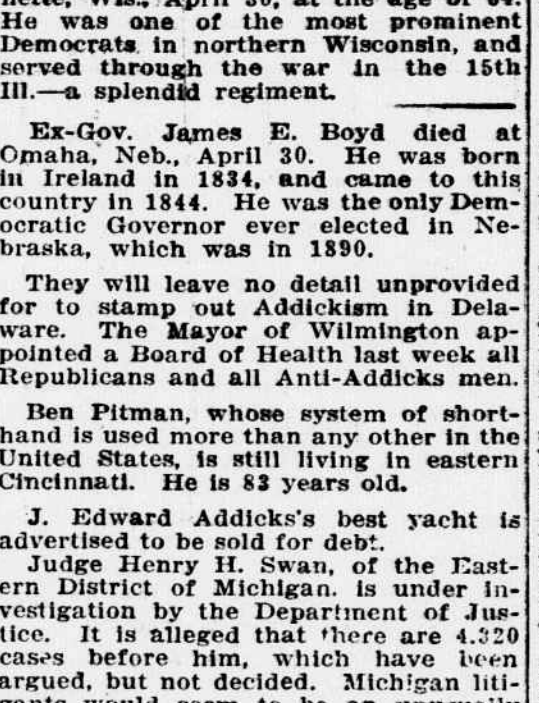
that she could use nothing but condensed milk on the table. Inventors are turning their attention to folding furniture which can be opened up when needed, and then folded away when not in use. William N. Anderson, San Rafael, Cal., has received a patent for this kind for a table which can be readily opened out or folded up and stored away to occupy the least possible space.



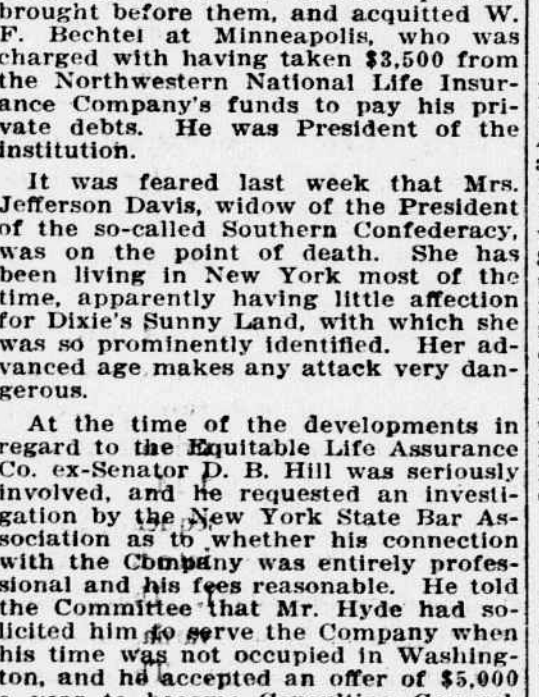
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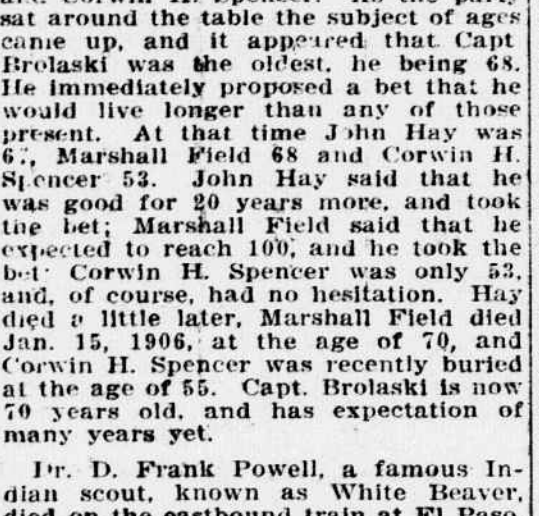
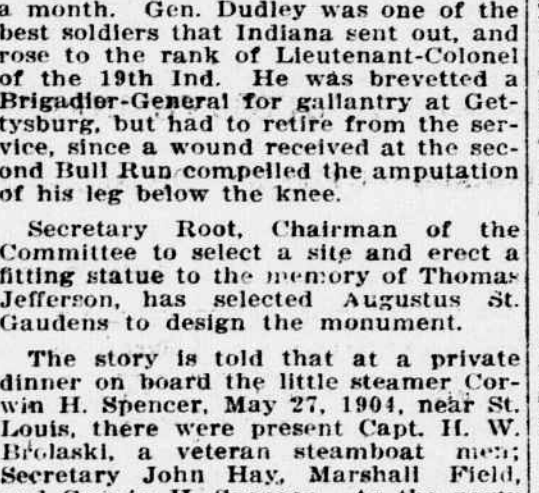
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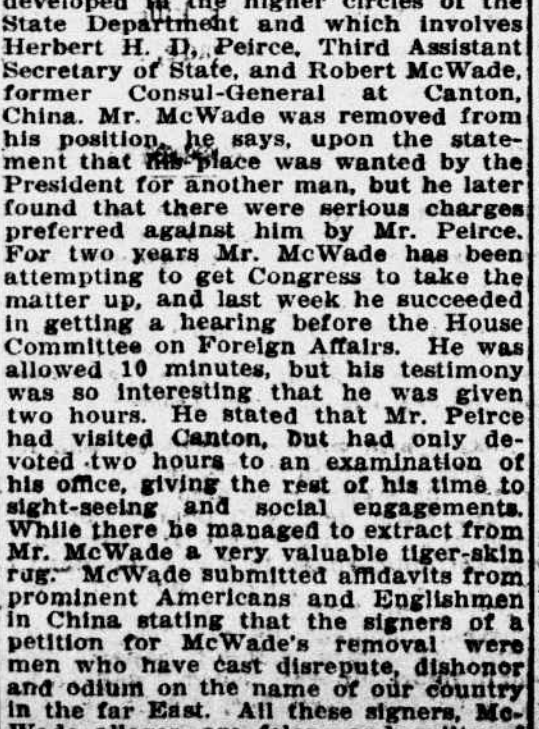
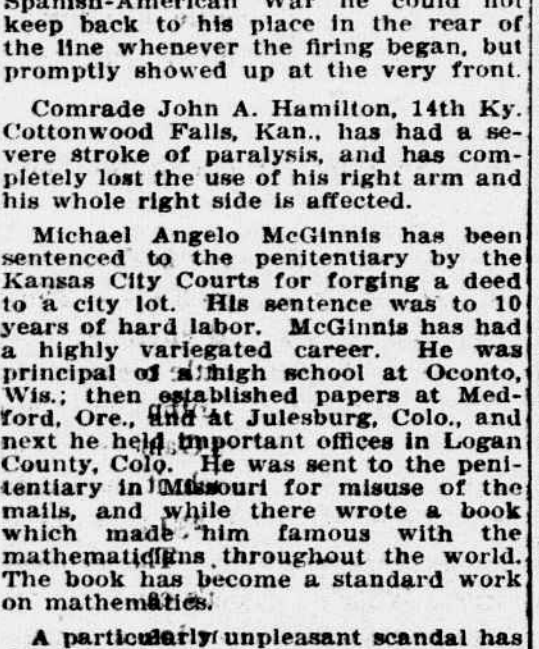
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crimes and offenses the character of which was published in a reputable paper. Mr. Peirce immediately responded to this sensational testimony by publishing the specific charges upon which Mr. McWade had been removed. These were seven in number, and charged that McWade had been drunk at a public function; that he employed a felon in a confidential position; that he had been guilty of private gain, and that he was neglectful of the interests of Americans in China. The tiger-skin rug was sent back to Mr. McWade, and the case was dropped, and he was given a hearing before the Committee. Mr. McWade is preparing formal charges against Mr. Peirce.

The widow of Prof. Curie has been made his successor in the University of Paris, the first time that ever a woman has attained this high position.

Alfred N. Chandler, of Philadelphia, a prominent broker, made a successful trip to the State of New Jersey, and returned to South Amboy, N. J. This is the first air voyage made by an amateur in his own balloon.

Department of Georgia.
The 18th Annual Encampment of the Georgia National Guard, which was held in Atlanta, April 13, 1906, and elected the following officers, all of whom were installed by Commander-in-Chief Tanner.

Commander, W. H. Kimball, Post 4, Tallapoosa, Ga.; S. V. C. C. R. Haskins, Post 1, Atlanta, Ga.; J. V. C. E. D. Smythe, Post 2, Augusta, Ga.; Medical Director, S. C. Brown, Post 17, Fitzgerald, Ga.; Adjutant-General, R. S. Eggleston, Post 1, Atlanta, Ga.

Department of Illinois.
John Buford Post, of Rock Island, Ill., presents Comrade E. H. Buck for Department Commander of Illinois, G. A. R. The Encampment will be held on Saturday, May 19, at Rock Island. Buck is a native of Illinois, and entered the army as a private in the 52d Ill. in which he served until discharged after Shiloh for wounds received in that battle. He was honorably discharged in 1865, and enlisted in the 8th Ill. Cav. in 1865, and served in the 18th Ill. Cavalry until June, 1865. He has been an active worker in the G. A. R. for more than 25 years, and is Past Commander of his Post.

Battle Monuments Dedicated.
The Wisconsin monuments on the battlefield of Shiloh were dedicated on April 7 by the surviving comrades of the 14th, 16th and 18th Wis. regiments with appropriate ceremonies.

Promoted Privates.
R. Guyton, De Haven, Pa., is much disappointed that there has been so little recognition of the men who by actual merit rose from the positions of privates to sergeant and captain. Please give a short history of the 18th N. Y., as I served in that regiment—Allen Conklin, 313 Bliss St., Ionia, Mich.

The 18th N. Y.
Editor National Tribune: I have taken the National Tribune for many years, and cannot do without it. Please give a short history of the 18th N. Y., as I served in that regiment—Allen Conklin, 313 Bliss St., Ionia, Mich.

The 5th Del.
Editor National Tribune: I wish you would publish a short account of the 5th Del. My father's regiment—Oliver McCullough, Phenixville, Pa.

The 1st N. H. Cav.
Editor National Tribune: Will you kindly print a short history of the 1st N. H. Cav.—Isaac Merrill, South Hampton, N. H.

In Memoriam.
At a regular meeting of Phil Kearny Post, Richmond, Va., eloquent resolutions were adopted expressing the deep sense of loss of the Post and to the Grand Army of the Republic through the death of B. C. Cook, late of the 6th Mich. He lost his arm at Seven Pines, was commissioned in the Veteran Reserve Corps, and was on duty at Richmond when he was mustered out. He remained there in private business and became a highly respected and influential citizen.

Carting for Bad Men in Nevada.
(Sacramento Bee.)
There being no jail at this place, and the Deputy Sheriffs being unable to compel immediate departure of unwelcome persons, they have resorted to the expedient of handcuffing them with their arms about cedar trees. Every day this week a trip down the gulch showed several bad men with their arms about cedar trees, and it is said that they were allowed to remain until the punishment equalled their offense.

SCIENTIFIC NOTES.
Compressing 300,000 newspapers by hydraulic machinery, an Austrian genius has constructed a yacht of the material thus obtained. It is 16 feet long, and every part, including the masts and sails, is paper. The small "poor man's oyster" of France and Spain, is pronounced a very pleasing food when selected from clean feeding grounds and properly cooked. Americans value the oyster at 100 per cent greater than that of the oyster, analysis showing that the solids embrace nearly 90 per cent of tissue building protein matter, which are 50 per cent greater than those of the oyster, and contain 10 per cent of mineral substance, including phosphates.

ARMY OF THE CUMBERLAND.

(Continued from page 1.)

invaded the State under Gen. Bragg and Kirby Smith. Under the command of Maj.-Gen. Nelson, whose untimely death cannot be too much deplored, these troops had been organized into brigades and divisions, and they had some able and experienced officers in Gen. Boyle, John C. Jackson, Gilbert Terrill and others. But the troops were as yet undisciplined, unprovided with suitable artillery, and in every way unprepared for active operations against a disciplined force. It was necessary to reorganize the whole force. This was done as far as possible by intermingling the new troops with the old without changing the names of the regiments. The troops were supplied with shoes and other essentials, of which they were greatly in need; among them certain light cooking utensils, which were of great use, and of which was reduced to one for each regiment, to carry a few necessary articles, such as blankets, and one for hospital supplies, besides the ambulances.

"The army was to have marched on September 10, 1862, which was subsequently suspended. The army was under Gen. Bragg, was known to the command, delayed the movement until the following day.

"The army marched on the 11th ultimo in five columns. The left column, toward Frankfort, to hold in check the force of the enemy which still remained at or near that place; the other columns, moving in the direction of the Valley, finally fell respectively into the roads leading from Shepherdsville, Mount Vernon, and the main force of the enemy, near Bardonia, which was to be. These roads converge upon Bardonia at an angle of about 15 degrees from each other.

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"The center corps arrived on the afternoon of the 17th, and was drawn up in order of battle. The advance guard, under Capt. Gay, consisting of cavalry and artillery, supported toward the right, and the main body of the army, pressed successfully upon the enemy's rear guard to within two miles of the town, against a somewhat stubborn opposition.

"The whole army had for three days or more suffered from a scarcity of water. The last day particularly the troops suffered from thirst, and the weather was hot and dusty. In the bed of Doctor's Creek, a tributary of Chaplin River, about two and a half miles from Perryville, the water was discovered, which the enemy showed a determination to prevent us from gaining possession of. The Thirty-third and Thirty-fifth Regiments, under Col. Daniel McCook, from Gen. Sheridan's Division, was ordered forward to seize and hold a commanding position which covered the depot, and to execute the orders that night, and a supply of bad water was secured for the troops.

"On discovering that the enemy was coming for the night, the order was sent to Gen. McCook and Gen. Crittenden to march at 3 o'clock, and to be ready to move at 4 o'clock. The orders were executed as early as possible on the right and left of the center corps, the commanders themselves to report in person for orders on their arrival, my intention being to make the attack that day if possible. The orders did not reach Gen. McCook until 2:30 o'clock, and he marched at 5.

"The Second Corps, failing to find water at the place where it was expected to encamp the night of the 17th, had to move off the road for that purpose, and consequently were some miles or more farther off than it would otherwise have been. The orders did not reach it in time, and these two causes delayed its arrival several hours. Still, it was far enough advanced to have been pressed into action on the 18th if the necessity for it had been known early enough."

Reception to Department Commander.
Comrade O. B. Warren, who was elected Commander of the Department of New Hampshire, G. A. R., at the last Annual Encampment, received a warm reception upon his return to his home at Rockport, N. H., by the Post, assisted by Sampson Relief Corps, Charles W. Canney Camp, Sons of Veterans, and the Mayor and City authorities, met him at the depot, and a procession was formed to Grand Army Hall, where, after speaking, a fine collation was served by the Relief Corps, with the Sons of Veterans as waiters.

Comrade Warren was born in Rochester, N. H., Sept. 15, 1845; enlisted Aug. 1, 1862, in the 9th N. H., and a few weeks later was in the battles of South Mountain and Antietam. He followed the fortunes of the Ninth Corps through Fredericksburg to Vicksburg and East Tennessee, and then returned to the Army of the Potomac, where he was captured at Spotsylvania and sent to Andersonville. He was also at Florence, and reached our lines at Wilmington. He was Orderly-Sergeant of his company for the last year of the war. Comrade Warren holds five commissions as Postmaster of Rochester from Presidents Hayes, Arthur, McKinley and Roosevelt, and has since served three terms in the New Hampshire Legislature.

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SHERIDAN'S RIDE.
(Continued from page 1.)

son for any length of time, until Sheridan was assigned to the command, when he completely routed the Confederate forces never to return, the Confederates never having lost a battle since the day of Gen. Early, Gen. Sheridan, via Jubal Early.

Gen. P. H. Sheridan gives this account of what happened after the lines were restored:

"Between 3:30 and 4 o'clock I was ready to assault, and decided to do so by advancing my infantry line in a swinging movement, so as to gain the Valley pike, with my right bent toward Middletown and the Belle Grove House; and when the order was passed along the men pushed steadily forward with enthusiasm and confidence.

"Gen. Early's troops extended some little distance beyond our right, and

when my flank neared the overlapping enemy he turned on it, with the effect of causing momentary confusion, but Gen. McClean quickly realizing the danger, broke the Confederates at the re-entering angle by a counter-charge with his brigade, which had turned back, and the enemy's flanking troops were cut off from their main body and left to shift for themselves. Custer, who was just then moving in from the west side of Middle Marsh Brook, followed McClean's timely blow with a charge of cavalry, but before starting out on it, and while his men were forming, riding a white horse, he saw that the enemy's arms around my neck. By the time he had disengaged himself from the embrace the troops broken by McClean had gained some little distance to their rear, but Custer's troops, sweeping across the Middletown meadows and down toward Cedar Creek, took many of them prisoners before they could reach the stream, so I forgave his delay.

"My whole line, as far as the eye could see, was now driving everything before it, from behind trees, stone walls, and all such sheltering obstacles, so I rode toward the left to ascertain how matters were getting on there. As I passed along behind the advancing Middletown, ever since the day of the battle, I saw the enemy's flank at the Opequon and at Fisher's Hill. I ordered them to be pushed forward, and the alacrity and celerity with which they moved on Middletown demonstrated that their ill-fortune of the morning had not sprung from lack of valor.

Death of Gen. Lowell.
"Meanwhile Lowell's Brigade of Cavalry, which, it will be remembered, had been holding on, dismounted, just north of Middletown, ever since the day of the battle, arrived from Winchester, fell to the rear for the purpose of getting their horses. A momentary panic was created in the nearest brigade of infantry, and a retreat was ordered, which as soon as his men were mounted they charged the enemy clear up to the stone walls in the edge of Middletown. At sight of this the enemy's right gave away. The accomplished Lowell received his death-wound in this courageous charge.

"Our troops were now moving on the retreating Confederates, and as I rode to the front Col. Gibbs, who succeeded Lowell, made ready for another mounted charge, but I checked him from pressing the enemy's right, in the hope that the swinging attack from my right would throw most of the Confederates to the east of the Valley pike, and hence out of their line of retreat through Strasburg to Fisher's Hill. The eagerness of the men soon frustrated this anticipation, however, the left insisting on keeping pace with the center and right, and all pushing ahead till we regained our old camps at Cedar Creek. Beyond Cedar Creek, at Strasburg, the pike made a sharp turn to the west toward Fisher's Hill, and here Merritt uniting with Custer, they together fell on the flank of the retreating columns, taking many prisoners and guns, among the prisoners being Maj.-Gen. Ramseur, who mortally wounded, died the next day.

Joy Over the Victory.
"When the news of the victory was received, Gen. Grant directed a salute of 100-shot guns to be fired into the air, and the President at once thanked the army in an autograph letter. A few weeks after, he promoted me, and I received notice of this in a special order from the Secretary of War, saying, 'that for the personal gallantry, military skill, and just confidence in the courage and patriotism of your troops displayed by you on the 19th day of October at Cedar Run, whereby, under the blessing of Providence, your routed army was reorganized, a great National disaster averted, and a brilliant victory achieved over the rebels for the third time in pitched battle within 30 days, Philip H. Sheridan is appointed a Major General in the United States Army.'

Seizure of Lottery Tickets.
A sensational descent was made last week at Wilmington, Del., by the Secret Service men of the Treasury. They found that the Honduras Lottery Co. had its headquarters and chief directors at Wilmington, and that a number of the most prominent men were involved in its operations. Tons of fine printing machinery, lottery tickets, circulars, etc., were seized, and a vigorous fight is going on at present. It is said that several thousands of people in Philadelphia are patrons of the lottery.